

undulatus, *pustulosus*, etc. In *U. gibbosus* the sexes may be recognized with a fair degree of probability by the more inflated shells of the females.

A decided difference we find in *U. verrucosus* Raf. (*tuberculatus* Barn.), where the older females are considerably elongated at the posterior end, that part of the shell being rather even, without the characteristic undulations and warty prominences. In younger, though fecund specimens, that feature is yet little marked.

U. phuseolus shows no constant differences in the sutural shape of the shell, but a decided one on the inner surface, in older specimens. The female has, in each valve, a deep, oblique sulcus corresponding with and leaving room for the gravid outer branchiæ.

In the female *Marg. marginata* the posterior end is directed downward and more inflated (with a stronger umbonal ridge), and the same can be said of "*An.*" *edentula*, although it is less marked.

6. *Numerical proportion of Sexes.*—In most species, the number of males is in excess over that of the females, often considerably. A few examples may be cited. Of 50 specimens of *L. subrostratus* Say, from a lake in Indiana, only about one-third were females, and the same must be said of a lot of *L. nasutus* from Ohio. Here, as in many species, the females were averaging considerably smaller. Of 115 *U. pyramidatus*, from the Ohio River, 71 were males, and of eight *retusus*, seven were males, the eighth was young with the gonad undeveloped. It is a question whether this be the normal condition or due to local causes, or an evidence of beginning degeneration.

In concluding, it may be said that the time has come when new species should be based not only upon the shells, but also the soft parts, if such be obtainable.

New Philadelphia, Ohio, April, 1898.

A NEW UNIO.

BY BERLIN H. WRIGHT.

Unio villosus sp. nov.

Shell ovate-elliptical, somewhat inflated, smooth, very inequilateral, bluntly rounded or subbiangular behind, subtruncate before, umbonal slope uniformly rounded above, disappearing at the lower margin. Substance of the shell moderately thin; very slightly

thickened before. Ligament long, thin and reddish. Beaks prominent and surrounded by coarse, oblique undulations, about four in number and rather acute at summit. Epidermis fuscous, black and deeply striate; strong transmitted light shows a light-olive texture, densely covered throughout with broad, greenish rays. Cardinal teeth rather solid and deeply serrated. Lateral teeth long, slender, straight, nearly smooth and extending to the posterior cardinal. Posterior cicatrices scarcely visible; anterior ones distinct. Beak cavities slight and rounded. Nacre tinged with salmon under the umbos, milky white anteriorly and of a bright blue and iridescent behind. Width, $2\frac{1}{4}$ in., length $1\frac{1}{4}$ in., diam. $\frac{5}{8}$ in.

Habitat.—Suwannee River, Suwannee County, Florida.

Type in National Museum.

Remarks.—This species seems to be related to both the *amygdalum* and *parvus* groups, is readily distinguishable from any of its associates by its remarkable width, beautiful rays and pointed, compressed posterior. It reminds one most of *U. minor* Lea, with which it is found, having the same dark, fuscous epidermis, and like that species is disposed to be sub-truncate before, but the rays, light teeth, thinner substance and greater size at once distinguish it. Some forms of *U. trossulus* Lea approach it, but the beak sculpture, outline and teeth are radically different, besides that species is never rough, but is smooth, polished and yellowish when taken from the water; the rays of the two species are quite similar, except that those of our species are only visible by the aid of transmitted light.

RECENT PUBLICATIONS.

SYNOPSIS OF THE RECENT AND TERTIARY PSAMMOBIIDÆ OF NORTH AMERICA, by W. H. Dall (Proc. Acad. Nat. Sciences of Philadelphia, pages 57 to 62). The title of this paper gives some idea of the ground covered by it. In the genus *Psammobia* a new section *Grammatomya*, is made by Dr. Dall, and in the group *Sanguinolaria* another one, *Nuttallia* is formed, with *Sanguinolaria Nuttallii* Conrad as the type. *Heterodonax* has been removed from the family *Donacidae* into this family. This will be gladly received by collectors who have been sorely puzzled to find affinities in *Heterodonax bimaculata* Lin. with *Donax*. Besides a full synonymy, the geographical distribution of the species are given. By the way,